

Appln. No. 09/910,657
Amdt. dated May 1, 2006
Reply to Office Action of January 31, 2006
Docket No. CH9-2000-0004 (246)

REMARKS/ARGUMENTS

These remarks are made in response to the Non-final Office Action of January 31, 2006 (Office Action). As this response is timely filed before the expiration of the 3-month shortened statutory period, no fee is believed due.

Claims 1-8, 11-18, 46-53, 56-66, and 69-71 are pending. Claims 9, 10, 19-45, 54, 55, 67, and 68 were previously cancelled. The claims were amended in a previous response so as to include subject matter deemed to be allowable in an earlier action dated October 11, 2005.

In the Office Action, Claims 1-8, 11-13, 15-17, 46-53, 56-58, 60-62, 64-66, and 69-71 were rejected under 35 U.S.C. 103 (a) as being unpatentable over U.S. Patent No. 6,064,959 to Young, *et al.* (hereinafter Young) in view of U.S. Patent No. 6,643,620 over Contolini, *et al.* (hereinafter Contolini). Claims 14 and 59 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Young, and further in view of U.S. Patent No. 5,799,273 to Mitchell, *et al.* (hereinafter Mitchell). Claims 18 and 63 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Young in view of Contolini, and further in view of U.S. Patent No. 5,680,511 to Baker, *et al.* (hereinafter Baker).

Applicants have amended independent Claims 1, 46, and 64 to emphasize certain aspects of Applicants' invention. Applicants also have amended dependent Claims 6, 11, 17, 51, 56, 62, and 70 to further emphasize certain aspects of the invention and to maintain consistency among each of the claims. The claim amendments, as discussed herein, are fully supported throughout the Specification. No new matter has been introduced by the claim amendments.

Applicants' Invention

It may be useful to reiterate certain aspects of Applicants' invention prior to addressing the references cited in the Office Action. The invention is directed generally

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to methods and systems for facilitating speech recognition. One aspect of the invention is the generation of a context-enhanced database, used in speech recognition, that is generated based on derived information.

A particular embodiment of the invention is a method that includes receiving an input that specifies a context in which a speech recognition system processes speech. The input, at least in part, can be automatically derived in a pre-processing step that defines content for a voice-generated output that is expected to be generated by a user of a computer system upon which the speech recognition executes.

The derived input, more particularly, can be derived from one or more of the following: text contained in an e-mail sent or received by the user; information in a document attached to an e-mail sent or received by the user; information in a document viewed by the user on a display of the computer system; information in a plurality of linked documents accessible to the computer system; information in a spread sheet executing on the computer system; facsimile information received via a facsimile device connected to the computer system; call center information received via calling device connected to the computer system; and/or information recorded by a web browser executing on the computer system. (See, e.g., Specification, page 8, line 17 – page 9, line 16.)

The method additionally can include preparing a first textual output from the speech signal by performing a speech recognition task to convert the speech signal into the first textual output. The context-enhanced database can be accessed to improve the speech recognition rate. The speech signal can be parsed into a plurality of computer processable speech segments. The first textual output can comprise a plurality of text segments, each corresponding to one of the computer processable speech segments. Selective ones of the text segments can be generated by matching a computer processable speech segment against an entry within the context-enhanced database. The context-

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enhanced database, moreover, can include a plurality of entries, each comprising a speech utterance, along with a corresponding textual segment for the speech utterance.

Additionally, the method can include enabling an editing feature so as to edit the first textual output and to generate a final voice-generated output. The method, finally, can also include outputting or otherwise making available the final voice-generated output.

The Claims Define Over The Prior Art

As already noted, independent Claims 1, 46, and 64 were rejected as being unpatentable over Young in view of Contolini. Young is concerned with correcting text that, as a result of recognition errors, is incorrectly generated by a computer-implemented speech recognition device or system. (See, e.g., Col. 2, lines 13-19; see also Abstract, lines 1-4.) Contolini is directed to wholly different objective, namely, that of effecting control over electronic audio and/or video programs using a voice-activated controller. (See, e.g., Col. 3, lines 51-57; see also Abstract.)

The references, even when combined, fail to teach or suggest every feature of the claimed invention

Applicants respectfully submit that neither Young nor Contolini, alone or in combination, teaches or suggests every feature recited in independent Claims 1, 46, and 64, as amended. For example, neither of the cited references teaches or suggests generating a context-enhanced database for usable in speech recognition, wherein the context-enhanced database is generated based on input derived from one or more of the following: text contained in an e-mail; information in a document attached to an e-mail; information in a document viewed on a display of a computer system; information in a plurality of linked documents; information in a spread sheet; facsimile information; call

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center information; and/or information recorded by a web browser executing on a computer system.

Young is cited at page 3 of the Office Action as disclosing the creation of a context-enhanced database based upon the particular application program that a computer user selects. The constraint grammar is asserted to be the same as the context-enhanced database that, in Young, is associated with the particular application.

Even if Young's constraint grammar is viewed as equivalent to a context-enhanced database, it remains, however, that the constraint grammar is not generated in response to input derived in the manner recited in the amended independent claims. Instead, as noted in the Office Action, the input that specifies context in Young is the particular application program that is activated by a user. Specifically, as disclosed in the portion cited at page 2 of the Office Action, Young describes how a constraint grammar functions as well as how it is activated:

"A constraint grammar, which also may be referred to as a template or restriction rule, may be a limitation on the words that may correspond to an utterance, a limitation on the order or grammatical form of the words, or both. For example, a constraint grammar for menu-manipulation commands may include only entries from the menu (e.g., "file", "edit") or command words for navigating through the menu (e.g., "up", "down", "top", "bottom"). Different constraint grammars may be active at different times. For example, a constraint grammar may be associated with a particular application program 155 and may be activated when the user opens the application program and deactivated when the user closes the application program." (Col. 4, lines 54-66.)

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Young's activation of an application program does not teach or suggest generating a context-enhanced database based on derived input, however. More particularly, the opening of an application program does not teach or suggest deriving an input based, for example, on input from text contained in the e-mail itself rather than the application program that facilitates e-mail exchanges.

The distinction is clearly seen by considering the result in Young when a user opens an e-mail program. As described in Young, the result is a constraint grammar for menu-manipulation commands, such as an edit or file command. Commands for an e-mail application, accordingly, might further include commands such as "open" or "send." But even so, these commands have nothing to do with the information contained in the e-mail itself; they are merely commands associated with the particular program – in this context, an e-mail application program. With Applicants' invention, the e-mail – information – what the e-mail itself contains, not the program that facilitates the e-mail – is the basis for generating a context-enhanced database that facilitates speech recognition.

Elsewhere, as noted at page 3 of the Office Action, Young describes the opening of a particular program that activates a vocabulary dictation grammar, the vocabulary corresponding to a specific topic such as a medical-related vocabulary or a legal-related vocabulary. In Young, a user can select a particular dictation vocabulary according to the user's particular selection of an application program. (See Col. 5, line 56 – Col. 6, line 40.) But again, this is not the generation of a context-enhanced database based upon derived input from an e-mail, a document, a facsimile, a browser history, or other information independent of a particular application program.

Moreover, each dictation vocabulary in Young corresponds to a generic topic, but not necessarily to particularized information as with Applicants' invention. The distinction can be highlighted by considering another example in the context of e-mail exchanges. A computer user running an e-mail application program could receive an e-

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mail relating to a medical malpractice suit. The e-mail is likely contain information, or specific words, peculiar to both the medical and legal fields. In such instances, it is not the general topic, but rather the content of the information in the e-mail itself that determines which words are relevant for speech recognition. Applicants' invention, by generating a context-enhanced database based on derived information, accommodates words in their specific context irrespective of a generalized topic. (See, e.g., Specification, page 15, line 21 – page 17, line 17.)

Even so, it is not content that distinguishes Applicants' invention from Young; it is how content is examined and used by each that distinguishes the two. Young activates a constraint or diction grammar based on a user's activation of an application program. Applicants' invention, by contrast, generates a particular context-enhanced database for use in speech recognition based on derived input, the input being derived from different information independent of a particular application program used to access or acquire the information.

Accordingly, Young does not teach or suggest generating a context-enhanced database based on input derived from any of the following: text contained in an e-mail; information in a document attached to an e-mail; information in a document viewed on a display of a computer system; information in a plurality of linked documents; information in a spread sheet; facsimile information; call center information; or information recorded by a web browser executing on a computer system. In each of the recited instances, the input derived is derived independently of the particular application program. An application program may dictate how the information is generated, received, or exchanged, but it is the information itself not how it is generated or conveyed that is the basis of a context-enhanced database that Applicants' invention uses for speech recognition. Contolini similarly fails to teach or suggest any of these features.

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There is no basis in the prior art for combining Young and Contolini

Applicants respectfully submit, moreover, that there is no teach, suggestion, or motivation, either in the references themselves or in the prior art generally, for combining Young and Contolini. Firstly, Contolini does not generate a text or transcript from received speech, and accordingly, there is simply no benefit from incorporating such a feature with Contolini. Secondly, Young uses a set of databases that depend on the particular application program activated, or otherwise in use, and accordingly, there is no use with Young for Contolini's multimedia database.

More fundamentally, the Contolini's multimedia database is of a different nature than the Young databases. So much so that their intended functions would be defeated by combining them. Contolini builds a set – a set of command descriptors – not a structured database. The purpose of speech input in Contolini is to select one, and only one, of those commands. It follows that Contolini's set of command descriptors would not easily extend to either speech recognition or transcription.

CONCLUSION

For the reasons stated herein, Applicants respectfully submit that there is no basis in the prior art for combining Young and Contolini. More fundamentally, however, Applicants respectfully maintain that even when combined Young and Contolini fail to teach or suggest every feature recited in independent Claims 1, 46, and 64, as amended. Applicants respectfully assert, therefore, that amended Claims 1, 46, and 64 each define over the prior art. Applicants further respectfully assert that whereas each of the remaining dependent claims depends from one of Claims 1, 46, and 64 while reciting additional features, the remaining dependent claims likewise define over the prior art.

Applicants believe that, in view of the claim amendments presented herein, this application is now in full condition for allowance, which action is respectfully requested. The Applicants request that the Examiner call the undersigned if clarification is needed

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on any matter within this Amendment, or if the Examiner believes a telephone interview would expedite the prosecution of the subject application to completion.

Respectfully submitted,



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